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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,584	08/25/2003	Lyn Lequam Ashton	TUC920030066US1	4087
45216	7590	09/10/2007		
Kunzler & McKenzie 8 EAST BROADWAY SUITE 600 SALT LAKE CITY, UT 84111			EXAMINER RUTZ, JARED IAN	
			ART UNIT 2187	PAPER NUMBER
			MAIL DATE 09/10/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/648,584

**Applicant(s)**

ASHTON ET AL.

**Examiner**

Jared I. Rutz

**Art Unit**

2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-7,9-12,15-18,20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-7, 9-12, 15-18, and 20-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. Claims 1, 4-7, 9-12, 15-18, and 20-21, as amended on 6/28/2007 with the filing of a Request for Continued Examination, are pending in the instant application.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 1, 4-7, 9-12, 15-18, and 20-21** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Independent **claim 1** recites the limitations "*A selection module configured to allow a user to select a user-defined capacity of the tape storage medium that is substantially equivalent to the capacity of the first segment of the tape storage medium*" and "*And an identification module configured to identify a tape storage medium as full when a substantial portion of the user-defined capacity of the tape storage medium has been used to store the data*".

5. Independent **claim 9** recites the limitations "*A selection module that is configured to allow a user to select a user-defined capacity of the tape storage medium that is substantially equivalent to the capacity of the first segment of the tape storage medium*" and "*An identification module that is configured to identify a tape storage device as full when a substantial portion of the user-defined capacity of the storage medium is used to store the data*".

6. Independent **claim 12** recites the limitations "*Allowing a user to select a user-defined capacity of the tape storage medium that is substantially equivalent to the capacity of the first segment of the tape storage medium*" and "*And identifying a tape storage device as full when a substantial portion of the user-defined capacity of the tape storage medium is used to store the data*".

7. The term "*substantially equivalent*" in claims 1, 9, and 12 is a relative term which renders the claim indefinite. The term "*substantially equivalent*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear how close to the capacity of the first segment of the tape the user-defined capacity must be to be considered "*substantially equivalent*".

8. The term "*substantial portion*" in claims 1, 9, and 12 is a relative term which renders the claim indefinite. The term "*substantial portion*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear how close to the user-defined capacity must be used to store the data to be considered a "*substantial portion*". The usage of this term is further unclear as it defines a portion of the user-defined capacity, and user-defined capacity also has an unclear relationship with the capacity of the first segment.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 1, 4-7, 9-12, 15-18, and 20-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Basham et al. (US 5,757,571) in view of James et al. (US 6,031,798).

11. Note: the rejection of claims 1, 4-7, 9-12, 15-18, and 20-21 under 35 U.S.C. 103(a) presented herein are made in light of the rejection of said claims under 35 USC 112 second paragraph presented supra.

12. **Claim 1** is taught by Basham as:

- a. *An apparatus for utilizing tape storage media segmentation to improve data access performance, the apparatus comprising: a tape storage medium configured to store data. Figure 2 item 206.*
- b. *A segmentation module configured to access a first segment and a second segment on the tape storage medium. Column 8 lines 41-46 shows the use of segments.*
- c. *A selection module configured to allow a user to select a user-defined capacity of the tape storage medium that is substantially equivalent to the*

*capacity of the first segment of the tape storage medium and that is less than a usable capacity of the tape storage medium.* Column 11 lines 16-24 shows that partitions may be defined, and that there may be a one-to-one mapping between partitions and segments. Column 10 lines 23-27 shows that the size of the segments, and therefore the partitions in a one-to-one mapping, can be selected by a user. Basham also teaches the benefit of keeping data near the beginning on the tape to lessen the time required to locate data on a tape at least at column 2 lines 21-26 and column 4 line 64 through column 5 line 5.

13. Basham does not expressly teach the use of the claimed identification module.

14. With respect to claim 1, James teaches:

d. *And an identification module configured to identify a tape storage medium as full when a substantial portion of the user-defined capacity of the tape storage medium has been used to store the data.* Column 6 line 60 through column 7 line 7 discusses the use of a CARTSIZE setting, which is used to artificially scale the data storage capacity of a selected data storage media to a value less than the actual capacity of the data storage media. Figure 3 and column 6 lines 9-16 shows that CARTSIZE is an entry in a table 40, which is included in library manager 24.

15. Basham and James are analogous art because they are from the same field of endeavor, tape-based data storage systems and methods.

16. At the time of the invention, it would have been obvious to one of ordinary skill in the art to identify a tape storage medium as full when a substantial portion of the user-defined capacity of the tape storage medium has been used to store the data.

17. The motivation for doing so would have been that it is often advantageous to have a sequential group of cartridges with the same artificial capacities and attributes, and also to group them in sequentially adjacent storage slots for high efficiency retrieval and storage in the library storage slots, James column 7 lines 54-61.

18. Therefore, it would have been obvious to combine James with Basham for the benefit of high efficiency retrieval and storage in library storage slots to obtain the invention as specified in **claims 1, 4-7, and 21**.

19. **Claim 4** is taught by Basham as:

e. *The apparatus of claim 1, wherein the selection module is further configured to allow the user to select the user-defined capacity of the tape storage medium before the data has been stored on the tape storage medium.*

Column 11 lines 6-23 shows that partitioning may be performed during pre-formatting.

20. **Claim 5** is taught by Basham as:

f. *The apparatus of claim 1, wherein the selection module is further configured to allow the user to select the user-defined capacity of the tape storage medium after the data has been stored on the tape storage medium.*

Column 2 lines 62-67 shows that the segment, and therefore the partition, can be changed after data has been written.

21. **Claim 6** is taught by James as:

g. *The apparatus of claim 1, further comprising a mapping module configured to associate the user-defined capacity with a tape storage device on which the tape storage medium is provided. Figure 3, column 3 line 66 through column 4 line 2.*

22. **Claim 7** is taught by Basham as:

h. *The apparatus of claim 1, further comprising a write module that is configured to write data to the tape storage medium within the user-defined capacity. R/W head 207 of figure 2, discussed at column 5 lines 62-64.*

23. **Claim 9** is taught by Basham as:

i. *A system for utilizing tape storage media segmentation to improve data access performance, the system comprising: a tape storage device having a tape storage medium that is configured to store data. Figure 2 item 206.*

j. *The tape storage medium having a first segment and a second segment. Column 8 line 66 through column 9 line 7 discuss a tape having a plurality of segments.*



k. *A host that is configured to communicate with the tape storage device.*

Item 202 of figure 2.

l. *A segmentation module configured to access a first segment and a second segment on the tape storage medium.* Column 7 lines 24-30 shows that a device block can be quickly located by advancing the tape a known distance to the segment containing the device block. Column 6 lines 14-15 shows that drive equipment 223 forwards and rewinds the tape.

m. *A selection module that is configured to allow a user to select a user-defined capacity of the tape storage medium that is substantially equivalent to the capacity of the first segment of the tape storage medium and that is less than a usable capacity of the tape storage medium.* Column 11 lines 16-24 shows that partitions may be defined, and that there may be a one-to-one mapping between partitions and segments. Column 10 lines 23-27 shows that the size of the segments, and therefore the partitions in a one-to-one mapping, can be selected by a user. Basham also teaches the benefit of keeping data near the beginning on the tape to lessen the time required to locate data on a tape at least at column 2 lines 21-26 and column 4 line 64 through column 5 line 5.

n. *A write module that is configured to write data to the tape storage medium within the user-defined capacity.* R/W head 207 of figure 2, discussed at column 5 lines 62-64.

o. *And a read module that is configured to read data from the tape storage medium.* R/W head 207 of figure 2, discussed at column 5 lines 62-64.

24. Basham does not expressly teach associating the user-defined capacity with the tape storage device, or identifying a tape storage device as full when a substantial portion of the user-defined capacity is used to store data.

25. With respect to claim 9, James teaches:

p. *A mapping module configured to associate the user-defined capacity of the tape storage medium with the tape storage device.* Figure 3, discussed at column 3 line 66 through column 4 line 2, shows that table 40 stores the CARTSIZE for each cartridge.

q. *An identification module that is configured to identify a tape storage device as full when a substantial portion of the user-defined capacity of the storage medium is used to store the data.* Column 6 line 60 through column 7 line 7 discusses the use of a CARTSIZE setting, which is used to artificially scale the data storage capacity of a selected data storage media to a value less than the actual capacity of the data storage media. Figure 3 and column 6 lines 9-16 shows that CARTSIZE is an entry in a table 40, which is included in library manager 24.

26. Basham and James are analogous art because they are from the same field of endeavor, tape-based data storage systems and methods.

27. At the time of the invention, it would have been obvious to one of ordinary skill in the art to identify a tape storage medium as full when a substantial portion of the user-defined capacity of the tape storage medium has been used to store the data.

28. The motivation for doing so would have been that it is often advantageous to have a sequential group of cartridges with the same artificial capacities and attributes, and also to group them in sequentially adjacent storage slots for high efficiency retrieval and storage in the library storage slots, James column 7 lines 54-61.

29. Therefore, it would have been obvious to combine James with Basham for the benefit of high efficiency retrieval and storage in library storage slots to obtain the invention as specified in claims 9-11.

30. **Claim 10** is taught by Basham as:

r. *The system of claim 9, wherein the segmentation module is further configured to use the tape storage medium according to a segmentation layout.* Column 7 lines 24-30 shows that a device block can be quickly located by advancing the tape a known distance to the segment containing the device block.

31. **Claim 11** is taught by Basham as:

s. *The system of claim 10, wherein the segmentation layout defines a plurality of segments on the tape storage medium, each segment having a user-defined size.* Column 10 lines 23-27 shows that the user can select the size of the segments.

32. **Claim 12** is taught by Basham as:

t. *A process for utilizing tape storage media segmentation to improve data access performance, the process comprising: providing a tape storage device having a tape storage medium. Figure 2 item 206.*

u. *Accessing at least one of a first segment and a second segment on the tape storage medium. Column 8 lines 41-46 shows the use of segments.*

v. *Allowing a user to select a user-defined capacity of the tape storage medium that is substantially equivalent to the capacity of the first segment of the tape storage medium and that is less than a usable capacity of the tape storage medium. Column 11 lines 16-24 shows that partitions may be defined, and that there may be a one-to-one mapping between partitions and segments. Column 10 lines 23-27 shows that the size of the segments, and therefore the partitions in a one-to-one mapping, can be selected by a user. Basham also teaches the benefit of keeping data near the beginning on the tape to lessen the time required to locate data on a tape at least at column 2 lines 21-26 and column 4 line 64 through column 5 line 5.*

33. Basham does not expressly teach identifying a tape storage device as full when a substantial portion of the user-defined capacity is used to store data.

34. With respect to claim 9, James teaches:

w. *And identifying a tape storage device as full when a substantial portion of the user-defined capacity of the tape storage medium is used to store the data.*

Column 6 line 60 through column 7 line 7 discusses the use of a CARTSIZE setting, which is used to artificially scale the data storage capacity of a selected

data storage media to a value less than the actual capacity of the data storage media. Figure 3 and column 6 lines 9-16 shows that CARTSIZE is an entry in a table 40, which is included in library manager 24.

35. Basham and James are analogous art because they are from the same field of endeavor, tape-based data storage systems and methods.

36. At the time of the invention, it would have been obvious to one of ordinary skill in the art to identify a tape storage medium as full when a substantial portion of the user-defined capacity of the tape storage medium has been used to store the data.

37. The motivation for doing so would have been that it is often advantageous to have a sequential group of cartridges with the same artificial capacities and attributes, and also to group them in sequentially adjacent storage slots for high efficiency retrieval and storage in the library storage slots, James column 7 lines 54-61.

38. Therefore, it would have been obvious to combine James with Basham for the benefit of high efficiency retrieval and storage in library storage slots to obtain the invention as specified in claims 12, 15-18, and 20.

39. **Claim 15** is taught by Basham as:

x. *The process of claim 12, wherein allowing a user to select a user-defined capacity further comprises allowing the user to select the user-defined capacity of the tape storage medium before the data has been stored on the tape storage medium.* Column 11 lines 6-23 shows that partitioning may be performed during pre-formatting.

40. **Claim 16** is taught by Basham as:

y. *The process of claim 12, wherein allowing a user to select a user-defined capacity further comprises allowing the user to select the user-defined capacity of the tape storage medium after the data has been stored on the tape storage medium. Column 2 lines 62-67 shows that the segment, and therefore the partition, can be changed after data has been written.*

41. **Claim 17** is taught by James as:

z. *The process of claim 12, further comprising associating the user-defined capacity of the tape storage medium with the tape storage device. Figure 3, column 3 line 66 through column 4 line 2.*

42. **Claim 18** is taught by James as:

aa. *The process of claim 12, further comprising writing data to the tape storage medium within the user-defined capacity. Column 12 lines 19-20 shows that device blocks are stored beginning in the earliest available segment on the tape.*

43. **Claim 20** is taught by James as:

bb. *A computer readable storage medium comprising computer readable code configured to carry out the process for utilizing tape storage media segmentation to improve data access performance of claim 12.* Column 6 lines 52-56.

44. **Claim 21** is taught by James as:

cc. *The apparatus of claim 1, wherein the first segment and the second segment are configured with different storage capacities.* Column 2 line 64 through column 3 line 4 shows that the size of the segments may be changed, thereby configuring the first and second segments with different storage capacities.

### ***Response to Argument***

45. Applicant's argument submitted 6/28/2007 with respect to the rejection of claims 1, 4-7, 9-12, 15-18, and 20-21 under 35 USC 112 first paragraph, see the second paragraph beginning on page 7, have been carefully and fully considered, and are persuasive. Accordingly, said rejection has been withdrawn.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jared I. Rutz whose telephone number is (571) 272-5535. The examiner can normally be reached on M-F 8:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner  
Art Unit 2187

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9/4/07